

# Space Nutrition Anthology Published

Meeting the nutritional needs of crewmembers—whether they are orbiting the Earth aboard the International Space Station or journeying to planets beyond our own—is critical to the success of any mission. Our experiences on Earth attest that proper nourishment is essential to optimal health and performance; because the human body undergoes a multitude of changes in response to spaceflight, nutrition becomes even more critical. The recently published *Nutrition in Space - flight and Weight - lessness Models* (CRC Press) will serve as an important reference tool for addressing this and related concerns. This 300-page volume is a compilation of nutritional observations, research results, and accomplishments drawn from 38 years of human spaceflight. Each of the 13 chapters features informative tables and figures and is accompanied by an extensive list of related publications.

*Nutrition in Spaceflight and Weightlessness Models* presents an overview of the nutritional approaches used during the earliest human spaceflights and then explores present-day approaches to food systems and regenerative life-support technology for spacecraft and

planetary missions. Fundamental concepts of nutrition are defined and then reexamined with respect to the unique spaceflight environment (including weightlessness, ionizing radiation, stress, and confinement) in which crewmembers must function and work. Detailed results from

life sciences experiments, flown on both the U.S. Space Shuttle and the Russian *Mir* space station, document how these concepts are translated into a vital element of the life support system.

---

The cover of the newly published book, *Nutrition in Spaceflight and Weightless Models*, shows Mission Specialist Jan Davis using chopsticks to eat in space.

---

## Nutrition in Spaceflight and Weightlessness Models



*Edited by Helen W. Lane and Dale A. Schoeller*

This work also considers a range of related topics, including results from ground-based simulations involving bed rest studies or other models; energy expenditure by space crews liv-

ing and working in space; and the potential of antioxidant nutrients to prevent radiation damage. The volume concludes with a look toward the future of space exploration by providing recommendations and research direction for astronaut nutrition.

This work was a collaboration between Dr. Helen Lane, a NASA nutritionist at Johnson Space Center, and Dr. Dale Schoeller, a

professor of nutrition at the University of Wisconsin. Contributors include NASA researchers and university and commercial scientists from Indiana, Massachusetts, Georgia, California, Texas, Wisconsin, New Jersey, and Florida. *Nutrition in Spaceflight and Weightlessness Models* will be a valuable reference and educational tool for researchers, educators, and students in the broader scientific community: nutrition and food scientists, instructors in advanced nutrition and aerospace life sciences studies, physicians involved in aerospace medicine, horticulturists, exercise physiologists, and engineers of air and water recycling systems.

### ***Uses for Nutrition in Spaceflight and Weightlessness Models:***

- anthology of nutrition research completed since the Gemini project
- comprehensive reference tool for life scientists
- compendium of in-flight and ground-based research for university students



---

During a Space Shuttle resupply visit to *Mir* space station, astronauts open bags of fresh fruit in the microgravity environment.

---

### **Technical Editors**

Helen W. Lane, Ph.D.  
NASA Lyndon B. Johnson Space Center  
Houston, Texas

Dale A. Schoeller, Ph.D.  
The University of Wisconsin  
Madison, Wisconsin  
Houston, Texas

Contact:  
Helen W. Lane  
281-483-7165  
,helen.w.lane1@jsc.nasa.gov

